The Maryland Fruit Grower

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APPLE MOVEMENTS AND PRICES

Bulletin No. 24 issued by National Apple Institute, February 24th, reports plans for another sales drive on apples by various "chains" during latter February and early March. It also states: "The net movement of apples out of storage in January was 5,724,000 bu. as compared with 5,892,-000 bu. a year ago. Deducting the slight export movement from the January 1940 figure, we have for this year what appears to be a record January movement into domestic consumption. The movement picked up sharply during the last 10 days of the month, and there are indications this increased activity has carried over into February. Prices were considerably above the level of a year ago. In the Chicago market where supplies from every major section are competing, the prices of Midwestern and Eastern apples levelled off (but did not decline) during the first 3 weeks of February, until on February 21 the prices of all leading varieties except Jonathan were exactly the same as on the same date a year ago, when the market was experiencing an upturn. Western apples have been selling near the prices of a year ago for some time."

The report also states that citrus fruit sales for domestic consumption in January were 2½ times as great as the apple volume. The general movement has been the best for many years. The California Fruit Growers' Exchange is supporting the citrus movement by an advertising appropriation of 7c per box.

PROFIT POSSIBILITIES OF FRUIT ORCHARDS

In February, 1941, "Better Fruit", published in the Northwest, some interesting figures are given regarding production costs, yields and profit margins. These figures will not apply to Eastern orchards, but are printed here, merely to show the close relation between total yields of marketable fruit per acre and costs of growing apples with such yields, also to show the difference between selling price and profit margins. Note the high grades considered. The figures start with trees producing 10 boxes of packed fruit per tree. The article follows:

"There has been a great deal of discussion recently as to the profit possibilities of fruit growing. As no late figures seem to be available in tabulated form, an effort has been made to get together some facts in a classified form. Figures given are average—taken from a number of orchardists in the Wenatchee Valley. No attempt is made to "boost" any variety or favor any plan of operation. The figures given are fact figures. No doubt the yields obtained are very variable according to varieties planted and cultural practices. These figures for yields and prices are supposed to be within the reasonable brackets for good varieties.

In the matter of costs, no attempt has been made to place any value

on land or equipment, interest owing on mortgages, etc. It is assumed that the grower does his own work as far as possible and takes care of his orchard without extra help except thinning, spraying, and harvesting.

No salary or labor is allowed except his living expenses—which are figured over a 12 month period—and as he has no rent to pay, the living expense figures of $730 are probably more than the actual expenses of a good many orchardists.

Many orchardists live on their orchards only about 8 months of the year and obtain outside employment from November to March. Most orchardists also have other incomes not noted, such as eggs from a few hens, their own vegetables, etc.

On a pack of 50% Extra Fancy, 40% Fancy and 10% C Grade, $1.00 sales average would have to net $1.08, $0.99, $0.73 respectively. $1.10 sales— $1.18, $1.08, $0.83. $1.25 sales—$1.35, $1.20, and $0.90.

Profit or Loss from Apples Listed

Here are production tables, costs, selling prices and profits or losses.

Apples—Varieties—Jonathan, Red Delicious, Delicious, Winesap, Golden Delicious, Blackjon, and Rome Beauty.

10 *acres*—350 *trees*

Production Packed	*Growing Cost per Box*	*Total Cost*	*Price if sold at:* $1.00 *per box*	$1.10 *per box*	$1.25 *per box*
3500 boxes	$1.06	$3705.00	$ 205.00	$ 145.00	$ 670.00
4000 boxes	.99	3930.00	70.00	470.00	1070.00
5000 boxes	.88	4380.00	620.00	1120.00	1870.00
6000 boxes	.80	4830.00	1170.00	1770.00	2670.00
7000 boxes	.75	5280.00	1720.00	2420.00	3470.00
8000 boxes	.72	5730.00	2270.00	3070.00	4270.00
9000 boxes	.69	6180.00	2820.00	3720.00	5070.00

Above figures based on following costs:

Irrigation, $115 (Actual figures vary from $20 to $250 according to water supply); taxes and insurance, $80; gas, oil and repairs, $73; fertilizer, $172; dormant spray, $110; nine other sprays, $700; electric power $50; misc. $100; living expenses for family of four, $730. Total fixed expense, $2130. Add to this for picking, hauling, packing and boxes $.45 per packed box. Thus 3500 boxes $2130, plus $1575 equals $3705.

An average crop in the Wenatchee Valley on full-bearing healthy trees, well cared for is probably about 700 boxes per acre. Some yields are much higher."

JAPANESE BEETLE IN THE GARDEN

Dr. George Langford, Entomologist, University of Maryland, in charge of Japanese beetle control in Maryland, states that ornamental plants in the garden which are not injured or only slightly attacked by Japanese beetle are calendula, coreopsis, goldenglow, nasturtium, petunia, sweet pea, carnation, cosmos, iris, pachysandra, phlox, tulip, chrysanthemum, four-o'clock, larkspur, pansy, poppy, violet, columbine, gladiolus, lily, peony, and snapdragon.

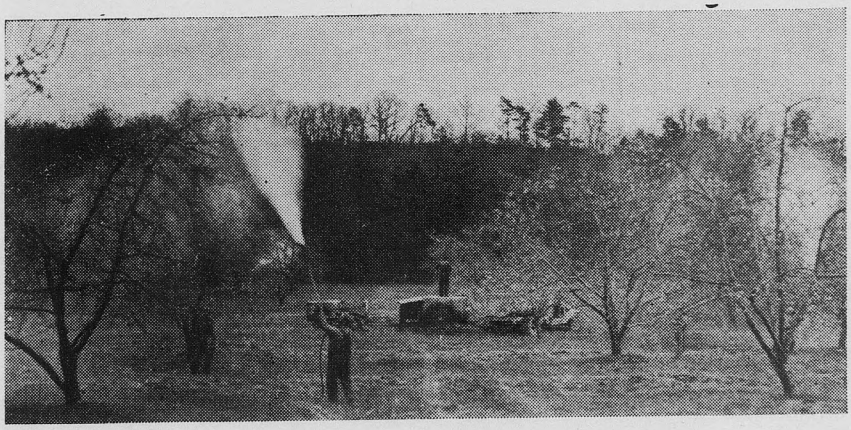
A DOLLAR FOR AN APPLE WORM

In February, 1941, "The Southern Planter," there is a write-up that all Maryland growers should know about. It concerns Mr. Stanley M. Fulton, a grower of peaches and apples in the Hancock section. The article is not an exaggeration but shows that close personal supervision will bring results, if equipment is sufficient to do the job that is being supervised. The article reads:

"Apple growers who have been driven to distraction by the pestiferous inroads of the apple worm (codling moth) should take faith from the experience of Stanley Fulton. He has just about eradicated this arch enemy of the apple from his 600 acres of orchard around Hancock in mountainous Western Maryland. And what is more remarkable, he has done it with only two cover sprays, using a weak fugicide and 3 pounds of lead arsenate in each 100 gallons of spray.

"At harvest time last fall," Mr. Fulton told us, "I offered a dollar to anyone who could find a wormy apple in my orchard, and not a dollar did I have to pay out. I packed 80,000 bushels of U. S. No. 1 apples."

We inquired of Dr. C. Graham, fruit insect specialist of the University of Maryland, about the Fulton spray program. "Yes, Stanley is correct," he said. "In our survey of commercial apple orchards last fall to determine the extent of codling moth damage, we couldn't find a wormy apple in those



The Fulton sprayer and "soup-wagon" in action.

blocks where the 'Fulton system' had been in operation for two years. We did find a little damage in sections of a rented orchard, where worms had previously taken nearly half of the crop. Stanley Fulton has solved the codling moth riddle, and I believe his method will prove the salvation of apple growers of the entire Appalachian area."

Mr. Fulton owns three orchards comprising 500 acres, 400 acres in apples and 100 in peaches. In addition, he leases two small apple orchards totaling 100 acres. Careful cost accounts are kept on the orchard, and Mr. Fulton finds that by getting perfect control of worms he can cut production costs to the bone.

"In 1939," he said. "when everyone was crying about cheap apples, I produced my crop for 22 cents a bushel in the orchard, or 46 cents per bushel

packed in boxes. If the apple grower is to compete in a constantly shrinking market, he must lower production costs; and I believe the cheapest way to accomplish this is to wipe out insect losses."

Mr. Fulton applies a regular dormant spray of oil to the entire orchard, and a pre-pink application (just before the blossom buds turn pink) to varieties that tend to scab (Delicious, Stayman, Winesap, Rome and Black Twig), using concentrated lime sulphur 2 gallons and water to make 100 gallons of spray. This application is repeated between the time the buds show pink and the blooming period. This is the principal spray for apple scab, and it is applied to all varieties, except Grimes Golden which rarely scabs around Hancock. Three pounds of lead arsenate are added to each 100 gallons of spray on varieties and in blocks where curculio damage occurred the year before.

Like all apple growers, Stanley Fulton starts the "petal fall" spray when 75 per cent of the blossom petals have fallen; but unlike most growers, he covers the entire orchard in 3 to 5 days His timing, therefore, is perfect. Each calyx cup is filled with poison before it closes. For this application 6 pounds of wettable sulphur, 3 pounds of lead arsenate and 100 gallons of water make the lethal dose. Concentrated lime sulphur, which is specific for scab, is not used because Mr. Fulton feels that it stunts the foliage; and vigorous foliage is the first requisite for quality apples.

The next application (first cover spray) comes two weeks after the petal fall spray. The same mixture is used unless the temperature goes above 90 degrees. In that event, 2-4-100 Bordeaux mixture is substituted for the wettable sulphur on all varieties, except Jonathan. The time of this application may vary a few days according to the season, but it always goes on just ahead of the hatching of the first apple worms. The Maryland Spray Service supplies this information.

As all fruit growers are aware, apple worms pass the winter in silken cocoons under the bark on trees, attached to rubbish in the orchard or spun up in packing sheds. In late spring the worms change to small grey moths that fly into the orchards and begin laying eggs indiscriminately on the upper and lower surfaces of apple leaves. The moth emergence varies with the season, but usually occurs soon after the trees bloom. The eggs begin to hatch into tiny white worms 2 or 3 weeks later. The egg laying and hatching period often lasts for several weeks. The first cover spray is put on to poison the young worms as they travel from the leaf to gnaw into the nearest apple. Unless killed these worms may develop two or three generations before cold weather arrives.

Three weeks after the first cover, Mr. Fulton applies the second cover spray and puts his spray rigs away for the year. For this last application he uses 3 pounds lead arsenate in 1-2-100 Bordeaux mixture. By stopping his spray schedule at this early date, the washing of fruit to remove residues is not necessary.

"What is remarkable about this spray program?" you ask. "Nearly every commercial apple grower in the Appalachian area uses just about the same schedule, plus from two to four additional lead sprays in summer; and still the codling moth is eating them out of house and home," you add.

"To control codling moth," any expert will tell you, "use the right materials, spray timely and thoroughly." But Mr. Fulton has placed a new intepretation on this triumvirate of successful worm control. To him lead arsenate is the *right material;* adequate equipment alone gives *timeliness;* and

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strict supervision is the only way to get *thoroughness.*

"To get timeliness of application," Mr. Fulton explained, "I use three 500-gallon power sprayers, each equipped with 800 feet of hose and 4 outlets carrying 6-nozzle brooms each. One man drives the tractor and supervises the 4 men at the nozzles. One stop is made per acre of orchard and the spray men cover their trees according to a definite plan—inside and out, top and bottom. The men are never more than 3 tree rows away from the supervisor who stands on the tractor or tank. This crew can empty a 500-gallon tank in half an hour. A 500-gallon 'soup wagon' hauls ready-mixed spray to the rig. A 150-gallon per minte power-take-off pump transfers the spray from 'soup wagon' to sprayer. The men at the nozzles never know when the sprayer is being filled."

To get thoroughness Mr. Fulton himself checks constantly on the foremen and the amount of material being used. He climbs the trees and sees with his own eyes that every leaf is coated, top and bottom. From 10 to 15 gallons of spray, depending on the season, is applied per tree at each application. Some big trees may even get 20 gallons of spray. Mr. Fulton expresses it this way: "We get coverage and forget the quantity of material used. We're out to kill the worms, not to stint on spray material."

"Tell your readers this," he concluded: "Concentrate on complete eradication of the first brood of worms in early summer and there will be no second and third broods to fight later in the season. What is more, when spraying is stopped early the fruit will color up better, the foliage will perform more efficiently, and the extra expense of residue removal will be saved. This plan will pay a profit to any grower—I have proved it beyond a shadow of doubt."

Any apple grower living in the Shenandoah-Cumberland area can spend a profitable day around Hancock with Stanley Fulton studying his methods of codling moth control. But don't go over there expecting to find a wormy apple and get a dollar. Instead you will see one of the best sprayed orchards in the country and meet one of the finest fellows in the apple game."

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COLD STORAGE HOLDINGS OF APPLES

The March 1 Cold Storage Report issued by Agricultural Marketing Service, U. S. D. A. reports that over 6 million bushels of apples and 13½ million pounds of frozen fruits were withdrawn from storage during February. Apple holdings in storage, March 1 were 16,880,000 bushels, exceeding the March 1, 1940, storage holdings by 2,387,000 bushels, and the 5-year average (1936-40) by 1,001,000 bushels. On March 1, 1941, there were 44,000 barrels, 7,598,000 Western boxes, 4,282,000 Eastern boxes and 4,868,000 bushel baskets in storage compared with 62,000; 10,239,000; 6,074,000 and 6,515,000, respectively, for February 1, 1941. The Federal Surplus Marketing Administration reported no holdings of apples in storage.

Professor—"I am going to talk on the sin of lying. All who have read the twenty-sixth chapter in the text-book, raise your hands."

Nearly every student raised his hand.

Professor—"Good. I have the right audience. There is no twenty-sixth chapter."

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TREE FRUIT RESEARCH IN MARYLAND

In the Fifty-Third Annual Report of the University of Maryland Experiment Station, the summary of research projects is reported in a way that farmers and fruit growers will be interested in reading. Anyone interested in this Report may obtain it by writing the Station at College Park, Maryland. The part relating to research with orchard fruits is given here:

An Economic Study of Peach Planting Distances.—Distance of planting peach trees apparently is an important consideration in starting an orchard. During the early years of the orchard, little difference is noted whether the trees are close together or well-spaced. In later years, greater spacing, with larger trees and better growth, will produce larger fruits and just as high yields as closer spacing. The better size and quality of fruit is especially important in marketing the crop. A complete report on this project, involving 1,300 trees, will be made later as a Station bulletin, with the recommendation that not more than 75 trees should be planted per acre, which means a planting distance of 24 feet by 24 feet, or any variation of these distances that gives 75 trees per acre.

A Study of Factors Influencing the Red Color of Apples.—Grade requirements and consumer preference make it necessary to produce apples of high color. An attempt was made to collect fruits of red strains of apples from several states in this section. Over 100 samples of fruit of approximately 25 varieties were compared and evaluated. The effect of certain factors, such as light and temperature, apparently are involved, which will require controlled conditions for study. The orchard of 100 red strains at the Horticultural Farm fruited with a few fruits of many red strains in 1939 and will undoubtedly furnish more fruits in 1940 for further study.

Factors Affecting Maturity, Shipping and Storage Quality of Fruits.—Much loss of marketability and quality is experienced when fruit shrivels or develops scald during the period in cold storage. It is apparent from work with Grimes and Golden Delicious during the last five years that a waxing treatment with a water-miscible wax *after* fruits have been held for a ripening period of one week greatly reduces shrivelling and scald and gives much improved, golden-yellow appearance, so essential in marketing yellow varieties. Tests have not been made on red varieties. The 1939-40 studies were planned to show the influence of ripening periods of less than one week upon storage quality. Grimes were harvested at weekly intervals and given ripening periods of 0, 2, 4, and 7 days before waxing. Check samples were given the same storage treatment and the whole was in duplicate. Packed baskets of Grimes and Golden Delicious were waxed to show the commercial feasibility of waxing. Fruit held for one week at the ripening temperatures before waxing presented the finest appearance at storage examination in January and February. Preliminary inspection of the data indicates that the normal wilting of Golden Delicious was markedly reduced by waxing treatment. In addition to waxing work, an intensive study of maturity has yielded results which enable better judgment of maturity of fruits for best quality during storage. Starch tests with Jonathan (see 1938-39 Report) have again been verified as a distinct aid with that variety.

Factors Involved in Spray Injury, Correlated With Insect and Disease Control and Physiological Effects.—Studies concerning skin-cracking in the York variety of apples were conducted in Western Maryland and also at

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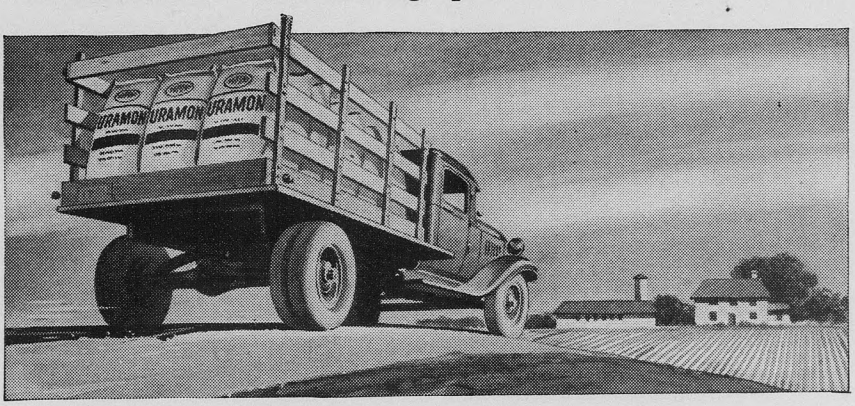

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College Park. Tree treatments included mulching with straw, paper mulching, root pruning, irrigation, girdling, and defoliation. Individual fruits were treated at intervals throughout the season with soluble waxes, alcohol, and rubber and parafilm bands. Banding with rubber or parafilm induced appreciably more cracking under the band than on the exposed surface of the fruits. This was true for fruits on trees which have shown little or no cracking and also on trees which have shown severe fruit cracking. Histological studies are being made of the relative development of cutin under the various tree and fruit treatments applied.

Adaptation of Fruit Varieties and New Seedlings to Maryland.—Testing of new fruit varieties and development of new varieties by breeding have immediate practical value by preventing loss by growers and nurserymen through planting varieties not adapted to this State. A new test planting of about 40 peach varieties, including the more promising Maryland crosses, was made last year on the Plant Research Farm. Maryland peach crosses, which were set two years ago in cooperative plantings with growers in several sections of the State, came through the past winter in satisfactory condition. A preliminary evaluation of these, under the several different conditions of soil and climate, will be possible. Approximately 10 of the newer peach introductions were added to the test this spring. Additional Maryland seedlings have been set for further testing. The raspberry variety planting at Rohrersville was continued during 1939. Yield records were again secured on both black and red varieties and additional observations were made as to disease resistance, time of fruiting, winter injury, etc. Two new varieties, added to the test the previous year, fruited and appear exceptionally promising. Among the newer varieties of red raspberries, both Newburgh and Taylor were more severely injured by the winter of 1938-39 than were Latham and Chief, although yields were not decreased in direct proportion to amount of killing back of the canes. Further testing of these varieties is necessary before they are planted widely on a commercial scale. The Marcy red variety, under the same conditions, showed about 98 per cent of the canes killed back three-fourths or more of the length of the cane. It is doubtful if it will prove adapted to Maryland conditions, although high in quality and attractiveness and largest in size of berry of all varieties under test. A new test planting of grape varieties on a small scale is being made this spring. It includes approximately 30 varieties, particularly the more promising newer varieties introduced in recent years.

Factors Affecting the Quality of Apple Juice Manufactured from Apple Varieties Grown in This Region.—With the dire need of apple growers for an outlet for surplus and off-grade fruit, it seemed logical to extend our knowledge of apple juice manufacture, using the new method of flash pasteurization and canning of the fresh juice. In a cooperative study with L. J. Kilby, Sperryville, Va., juices were made of Grimes, Golden, Jonathan, Delicious, Yellow Newton, Winesap, York Imperial, Stayman, Winesap, and Bonum. Cider was made at two stages of maturity, as measured by the Starch-Iodine method and the pressure test. In the opinion of workers, juice pasteurized for three seconds at 180° F., treated with Bentonite, filtered with Hyflo Super-cel, repasteurized, canned and cooled immediately, was of better quality than enzyme treated juice, so this process was used on the above varieties and the canned product was saved for future studies in blending. A later study revealed that a high quality, clarified juice could result without double pasteurization. Of the various treatments compared

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with fresh juice, with fresh unfiltered pasteurized juice, and with juice of the treatment mentioned above, raw juice treated with Bentonite, filtered, canned and cooled immediately, was most nearly like the untreated juice. A practically sterile product was obtained by pasteurization and filtering seemed instrumental in reducing the bacterial count. Blending studies on the canned juice are yet to be completed.

Effect of Environmental Factors and Cultural Practices on Growth and Fruiting Responses of Fruits.—Unproductiveness and erratic bearing of Delicious and other varieties is a real problem in many orchards.

A. *Maintenance of Annual Bearing of Apple Varieties*: Biennial bearing studies were continued, with the work focused on the Yellow Transparent variety. A block of 14-year old trees at College Park that have been for some years in the biennial bearing habit was subdivided, with one-half of the trees to receive various treatments in the "on" year, and the other half in the "off" year. These trees were in the "on" year during the past season and treatments were designed to increase bud formation during the fruiting year. Yield records were secured on all trees of both blocks and the number of fruits harvested was recorded for each of the treated trees. Fruits were measured at semi-weekly intervals to determine growth rates and blossom and yield records will be secured this year from each tree to determine the relative effectiveness of the several treatments. The "off" year treatments during the coming year on the block reserved for that purpose will be designed to determine whether it is possible to effectively limit the formulation of fruit buds in the "off" year, so that excessive fruiting will not occur the following year.

B. *Factors Associated with the Productiveness and Unproductiveness of the Delicious Apple.*—Reasons underlying the erratic fruiting behavior of Delicious will be the subject of experiments at College Park and two field locations during the coming season. Phases to receive particular attention are: Revaluation of the pollination status with eventual determination of consistently effective pollenizers; relation of the nutritional status of the tree to the set of fruit; and, the effect of light intensity and photoperiod on fruit set and fruit bud formation. Details of the treatments have been completed.

Growth and Fruiting Studies of Native and Cultivated Blueberries, With Special Emphasis on Root Development in Relation to Soil Erosion Control.—This work, initiated in 1938 in cooperation with the Hillculture Division of the Soil Conservation Service, was based on the need for adapting the blueberry for use as a soil-conserving crop which would also furnish annual cash income.

A. *Field Experiments.*—An experiment was started on the Soil Conservation Service Station at Beltsville, in the spring of 1939, to determine the effect of various mulching materials on root development of wild and cultivated blueberries. Treatments included peat moss, oak leaf mulch, pine needle mulch, straw mulch, lespedeza cover, and clean cultivation. A number of fertilizer treatments were included also. Soil samples were taken to determine the level of nutrients and the degree of acidity. By the spring of 1940, the check plots were the only ones showing evident symptoms of erosion.

B. *Greenhouse Experiments.*—In order to be able to diagnose nutrient deficiencies in the field, 10 systems of 12 glazed pots each were set up in the greenhouse. Nutrients were applied by a method which makes possible an

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accurate distribution to each pot. Three rooted cuttings of the Cabot variety were placed in each pot. One of the 10 systems is given a full nutrient solution, while the other 9 systems are supplied solutions containing one of the following deficiencies: nitrogen, calcium, potassium, phosphorus, sulphur, magnesium, iron, manganese and boron. Within the systems of 12 pots, 6 are in sand only and 6 are in sand-peat mixture. Two of the sand pots and 2 of the sand-peat pots receive thiourea, 2 receive thiamin (Vitamin B_1), and the other 4 pots in each system receive no growth substance. The following growth substances were applied to similar rooted cuttings, which were placed in clay pots in the ground bed of the greenhouse: napthalene acetic acid, napthalenacetamide, indoleproprionic acid, photosensin, ascorbic acid, thiamin, and thiourea. Four soil types were placed in another ground bed in the greenhouse—silt loam from a wheat field at College Park; gray sandy loam, typical blueberry soil in some sections; silt loam with bluish cast, swamp soil ;and, silt loam, red soil from blueberry field at Beltsville. Application of additional phosphorus and potassium is being tested on these soils.

C. *Histological Work.*—Preliminary slides of root sections indicate a very prominent endodermis. Several blueberry seedlings have been imbedded in paraffin and an attempt will be made to trace their vascular anatomy through the transition zone.

Relation of Soil Moisture, Age of Plants, Spacing of Plants, and Use of Mineral Nutrients to Flower Differentiation, Fruit Yield and Quality of the Strawberry.—Work is being conducted to determine the most desirable width of row to maintain highest yield, size and quality of fruit with the Blakemore variety of strawberry, when thinned (spaced) to a distance of 4 to 5 inches between plants. This thinning treatment was maintained during the past season for 10, 20, 30, and 40 inch width of rows, with 5 replications of each treatment. A second series of thinned and matted row plots received differential treatments of nitrate of soda at increments of 100 pounds per acre up to four applications during the growing season. Detailed fruiting records will be secured from all these plots. Studies have been conducted on the seasonal development of strawberry mother plants.

Plant Propagation, With Special Reference to Fruits and Ornamental Plants.—Problems of propagation are of importance to both the nurseryman and fruit grower, as the production of both trees and fruit are greatly dependent on the root-stock on which the variety is propagated.

A. *Apple Root-Stocks:* Self-rooted, six-year-old trees of about 40 varieties of apples were dug for root study. The roots were made into root cuttings for another attempt to propagate comestible varieties by this means. A quarter of an acre was set with these cuttings, with the upper end waxed and protruding above the ground. The growing season was very dry and the root cuttings failed to grow, with the exception of a few that had been previously selected by the U. S. Department of Agriculture, which could be propagated by this method. About 12,000 root grafts of apples were made. They represented 30 to 50 grafts each of varieties and selected clones for a further attempt to cause scion rooting by layering the grafts the first year. A piece of new land was selected, well fertilized and limed, but, as in previous tests, the undertaking was a failure and the grafts damped-off after the layering process had begun. Further study of this difficulty is being made.

B. *Peach Root-Stocks:* Work is being conducted at Salisbury in cooperation with the Bureau of Plant Industry, U. S. Department of Agriculture,

in testing domestic seedling stocks in a large orchard planting of 3,000 trees.

C. *Ornamentals:* Present studies, started in the fall of 1939, are centered on propagation and transplanting. Propagation is being carried on with both seeds and cuttings of woody and herbaceous material under various temperatures, light intensities, rooting media, and with different treatments of "growth inducing" substances. The response of evergreens is being studied after periodical transplantings in various types of soil and with various treatments, under both field and greenhouse conditions.

Spray Materials? Read the Ads

The 1940 Maryland Apple Exhibit—Baltimore, Maryland

ABOUT PAINT

Two coats of paint are usually sufficient for a surface where the old finish is in reasonably good condition. On new wood, three coats should be applied, first a thin priming coat, then a semi-gloss body coat, followed by a glossy elastic finishing coat. In figuring amount of paint necessary, multiply the distance around the building by the height of building, and if there are any gable ends, multiply the height of the triangle by one-half its width. This gives the number of square feet to be covered. Into this number divide the number of square feet that one gallon of paint will cover, and the result will be number of gallons of paint required. Generally, paint for the priming coat will cover about 650 square feet per gallon and for the second and third coats, will cover 700 to 750 square feet per gallon.

Mrs. Jay—"I always feel a lot better after a good cry."

Mrs. Gee—"So do I. It sort of gets things out of your system."

Mrs. Jay—"Well, it doesn't get anything out of my system, but it surely gets things out of my husband."

with Arsenate of Lead KILLS Codling Moth

What D-X does: D-X impregnates the arsenate of lead with rotenone and pyrethrum giving you **triple codling moth protection: First,**—Immediate paralysis takes place when the larva comes in contact with D-X or takes it in his mouth, whether he eats it or not. **Second,**—Many live moths are killed by contact while spraying. **Third,**—The coating and build-up of the spray is increased.

What Growers say:

"_____We want to say that this combination of D-X and arsenate of lead for the codling moth peak spray is something very real. We never had such results."—W.R.C., N.Y.

"_____With D-X and arsenate of lead I got better control of codling moth and aphis, with at least 90% perfect apples."
—A.H.B., N.Y.

"_____Where we used D-X and arsenate of lead in 1940 we packed 6890 bushels U.S. No. 1's with only 32 bu. culls, as against 80% codling moth injury in 1939. These results speak for themselves."—J.E.S., Pa.

"_____The best results I ever had with any other combination of sprays. Have never seen any spray that stuck and coverd so well."
—E.L.F., N.Y.

What You Do: You can duplicate this control in your orchard.
1. Apply your regular spray schedule up to the first or second cover sprays.

2. Add 1½ pints D-X (per 100 gals.) to your regular spray at the peak of the first brood moth emergence. Omit lime in this spray.

3. Spray with 1½ pints D-X and 3 lbs. arsenate of lead per 100 gals. alone, at the peak of the hatch of the larvae, (about 10 days later).

Write Department "F" for new descriptive literature and prices. D-X controls aphis, leaf hoppers, and other pests, too.

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